

## City of San Diego, CA Metropolitan Wastewater Department

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Located on 39 acres adjacent to the Miramar Landfill, the Metro Biosolids Center (MBC) is the City of San Diego's state-of-the-art regional biosolids treatment facility. Biosolids are the nutrient-rich, processed organic material produced by the wastewater treatment process. The plant, which began operation in 1998, is an essential component of the region's wastewater treatment system. Up until 1998 digested solids (sludge) from the Point Loma Wastewater Treatment Plant's (PLWTP) digesters were dried in open fields or through belt and filter presses on Fiesta Island in Mission Bay and then trucked to landfills.

The location of the Biosolids Center required construction of two pipelines to feed the facility; the 17-mile Miramar Pipeline from the [Point Loma Wastewater Treatment Plant](#) and a five-mile pipeline from the [North City Water Reclamation Plant \(NCWRP\)](#).

The process systems of the Metro Biosolids Center are fully automated and can be operated from any work station in the plant. The plant can also be operated remotely from MWWD's Operations Center in Kearny Mesa, four miles from the MBC. The on-site Process Control Lab collects and monitors chemical and biological data from each stage of the treatment process.

MBC provides two treatment operations: thickening and digestion of the raw solids (raw sludge) generated at the North City Water Reclamation Plant (NCWRP); and the dewatering of the wet biosolids from both the PLWTP and the NCWRP. Biosolids are a nutrient-rich, organic material produced from material collected in the wastewater treatment process. The facility produces dewatered biosolids that are approximately 30 percent solids and 70 percent water, the consistency of wet plaster.

The North City Water Reclamation Plant does not have digesters on site. Raw solids from the primary and secondary treatment processes at NCWRP are pumped to receiving tanks at MBC. Then they pass through degriters to remove any abrasive material that could damage the processing equipment. The grit is removed, dried and disposed of off-site.



The raw solids are thickened in five centrifuges before being pumped into one of three anaerobic digesters. There, the volume of organic matter is reduced in a process similar to human digestion. After digestion the organic solids are referred to as biosolids. From the anaerobic digesters, the biosolids are sent to a Digested Biosolids Storage Tank where they are mixed with biosolids from the Point Loma Wastewater Treatment Plant.



The mixed biosolids are piped to eight dewatering centrifuges that use centrifugal force to remove water from the biosolids. The liquid separated out of the biosolids ("centrate") is returned to the sewer system for treatment at Point Loma. The dewatered biosolids are pumped into storage silos before being trucked off-site.

Biosolids may be used to promote growth of agricultural crops, to fertilize gardens and parks and to reclaim and replenish worn and nutrient-depleted land. Currently, biosolids are used as soil amendments, landfill, and landfill cover.



Odor Control is an important part of the overall wastewater treatment process. Odor is caused primarily by hydrogen sulfide gas. Throughout the plant, Odor Control "Scrubbers" draw the foul air (and odors) off the flow of wastewater. The foul air is drawn into the "scrubbers" where it passes through a bleach solution spray which neutralizes odor-causing sulfide compounds. The "scrubbed" air then passes through carbon filters which remove any additional

foul air before being released into the atmosphere.

MWWD was one of the first City Departments to complete a comprehensive energy conservation plan. One of the key elements in the plan is Cogeneration, the utilization of methane gas to power the largest MWWD facilities. MWWD has a long-term agreement with a private firm that uses methane generated by MBC digesters and the Miramar landfill to power both the MBC and the North City Water Reclamation Plant. The Metro Biosolids Center has received a number of awards including the 1998 *Fiscal Watchdog Award* from the San Diego County Taxpayers Association for its cogeneration and landfill gas facility and the San Diego *Grand Orchid - People's Choice of Design Award* for architecture, environmental solutions, fine arts, graphic design, signage, interior and lighting design.